

This presentation was made by Dave Ackmann (ackmanns@charter.net) on March 24, 2019 at the pre-meeting of the St Louis chapter of the AAW. The eggs in the bowl represent simple eggs turned in 2017.



I have four grandchildren under the age of nine, and when I last turned eggs in 2017 they really liked playing with them. I have one of my own made out of Corian, and I like playing with it as a desk toy when at my computer. I had been away from turning for over a year, and when club President John Hoeing suggested that I do a presentation on turning eggs, I thought that such a challenge was just what I needed. I had 4 weeks to get back my "turning touch", and then could encourage the rest of the club to give eggs a try. Also, doing so would allow me to give each of my grandchildren a specially designed "keepsake egg" as a special Easter gift.



Of course, eye and face protection is essential. For my resin based eggs, and on some wood species, respiratory protection is a must. If you have a shop vacuum to collect you shavings, you might want to empty it and replace the filter before turning a dozen eggs, just to maximize dust collection. Also, larger eggs can get heavy, and you don't want them flying off your scroll chuck, so give the chuck key an extra little turn before starting the lathe. Finally, egg turning can be addictive, but standing in one spot for several hours can be hard on the body, so take a break every now and then and keep up your hydration to avoid cramps in your legs or hands.



I get much of my knowledge and inspiration for wood turning from YouTube, and for turning eggs my inspiration is Mike Peace. Mike is from the Atlanta area and frequently publishes videos on many different turning topics. His template for sizing eggs was helpful to me, and I made copies of the template available at the March meeting. I also like making larger eggs, larger than the 1.625" diameter that his template uses, so I also made a scaled up version available as well. If you like, take a look at his YouTube video and his blog (which contains his original template)



Mike starts his eggs with a 2 by 2 inch block, 3 3/4" long. I prefer a 4" long block, but that may be because I occasionally make larger eggs, or perhaps I like a bit more distance between my fingers and my chuck.



Yes, there are other way to make an egg, including the technique where a design is placed on the ways of the lathe, and then light projected down from above. Then all the turner needs to do is keep an eye on the shadow and turn away anything that does not look like an egg. In this image, the turner does not have an egg draw on the platform on the lathe, and he probably should. I am not a fan of this technique because the shavings tend to obliterate the shadow. Your lathe, your call.

The Demo

Place 2" by 2" by 4" block in Scroll Chuck Turn to round, cut a tenon Reverse block in chuck, finish rounding Withdraw cone center, part off divot Using template, mark opposite end Mark high point of egg Turn it to desired size, sand, decorate Finish and part off Fix the nub

For the demo, I used one of the club's Nova lathes, a midi sized lathe with a 3/4 HP motor (my home lathe is a Delta 46-460). I did not need the variable speed feature for the basic turning, but would have if I had extended the demonstration to include sanding and finishing. Placing an end of the cherry blank in the chuck (and tightening it down extra snugly), I brought up a cone center in the tailstock and turned the right 2/3 of the blank to round using a spindle roughing gouge. I cut a tenon about 3/8" inches long on the right side with my Bedan chisel. I then reversed the blank such that the tenon end was held snugly in the chuck. Again with the cone center securing the right end of the workpiece, I brought the rest of the piece to round. With the lathe off, I used the template to determine if the blank was the diameter I wanted, and continued rounding until it was the right size. When it was, I took the cone center out of the tailstock and pushed the tailstock out of the way. The cone center had left a small divot in the right end, so I parted off about $1/4^{"}$ from the right end. Now I used the template to mark of the length of the egg, and I cut a small part where the left edge of the egg would be. I also made a pencil mark where the high point of the egg should be (the high point of an egg tends to be closer to the blunt end of an egg rather then the pointy end. The ratio between the different ends tends to be anywhere between 1.3 and 1.5 to one; for example, if the total length of an egg was 2.3", you might want to make the high point about 1.3 inches from the pointy end, which leaves 1.0" for the length of the blunt end). It's your egg, so it's your decision. I turned my demonstration egg with a combination of cuts from a spindle gouge and small skew. After getting the shape I wanted, I lightly sanded the egg (I prefer Abranet sanding mesh over standard

sandpaper, available from Woodcraft). I then decorated the egg by using a knurling wheel (available from RonBrownsBest.com), then outlining the knurling with a small pointy tool and a burning wire suspended between two wooden balls (also from RonBrownsRest.com). I colored the knurled areas with Tombow brand with markers available from art supply stores. I did not put a finish on the egg during the demo. Finally, I parted the egg with the skew. BUT ALAS, there was still a nub where egg separated from the wood left in the chuck! That will be fixed in the next few slides.



The simplest way to get rid of that nub would be to cut it off carefully with a knife or skew. But I wanted a better way, one that would give me a nice round end, smooth and well finished. Alan Stratton also has some good YouTube video and specifically shows a chuck he made from plumbing parts. I was intrigued because I liked the idea of securing the egg with a fitting that I could spin into place. I made Alan's jig and secured it in a block of poplar that had been tapped to fit my lathe spindle using a Beall brand tap. This was a great idea that did not work for me. I never could get the pointy end of the egg to center in the chuck, making it impossible to do a decent sanding and finishing job. Two hours of my life spent trying this idea, before I "chucked it" and tried something else.



Dick Sing in his book on turning ornaments and eggs suggest a piece of PVC pipe and a hose clamp as a chuck. I started with a 2" diameter piece of PVC, about 4 inches long. I cut a shallow rabbet (aka: Dado or "groove") in the PVC to keep the band clamp from wandering around on the PVC. Per Dick's suggestion, I drilled eight 3/8" holes in the side, and using a bandsaw, I cut fingers from the end into the eight holes. Using a hole saw held in the lathe tailstock with a Jacobs chuck (aka: drill chuck) I drilled a groove into the wooden block, about 5/8" to 3/4" deep (the other end of the block was tapped to match my lathe spindle, as described before). The groove was a bit too narrow for the PVC, so I widened it a bit with a parting tool. I then placed some epoxy in the groove, then jammed the PVC into the groove. With the hose clamp still off, I mounted the wooden end onto the lathe spindle and turned the lathe on slowly, adjusting it carefully to make sure it ran reasonably true. After the glue dried overnight, I installed the clamp and the egg chuck was ready to go.



This is another view of the egg chuck. Note the hole in the side of the wooden base: this makes it easier to insert a piece of steel rod to spin the chuck from the spindle, should it get stuck.

Fixing the Nub Demo



Here I mounted an egg with the high point under the hose clamp (mounting the egg too far either way can lead to "flying eggs", so make sure the work piece is held securely). With the point of the egg projecting from the PVC, I can easily sand the pointy end and finish it as desired. Just make sure to keep your hand a safe distance away from the rotating band clamp; you may want to cover it with duct or electrician's tape. And finishing the egg with a T-shirt or other cloth is a NO-NO.

Subsequently I made similar jigs for 15/8'' size eggs. There is no PVC available in 15/8'' diameter, so 11/2'' PVC is required. If your eggs are a bit over this diameter, the hose clamp can open up a bit and still secure them well. If they are a bit under size, you might want to make an additional jig with the slots a bit wider, so that the fingers can contract just a bit more.



Here we have an "before and after" shot. You can have a dozen of these in an afternoon.



But a dozen of the same eggs could get boring. Children would argue about which egg belongs to which child. What we need is VARIETY! We need eggs from different species of wood and different sizes, too. Wood with heartwood and sapwood in the same egg. We should have decorated eggs and colored eggs. We might even want eggs from materials other than wood. This is where your creativity, and your stock of turning blocks comes into play.

Knurling, Coloring, Edging

In the demo portion we used a knurling tool to decorate the eggs and it is by far the easiest way to add some variety. Just make sure to use the small pointy tool (or skew, or if all else fails, a parting tool) to separate the knurled area from the smooth area; a burning wire is a good way to further darken the separation line via friction. It makes the egg look nicer, and if you use colored markers, it prevents the color from bleeding.



Here I used dyes available from Craft Supply among other vendors to color an egg blue and yellow. It was the first time I had ever dyed anything. I should have used the pointy tool to separate the yellow from the blue, and should have been more careful to avoid getting blue dye where I wanted yellow. Or perhaps that is what we call "Art".



I had a bunch of spalted Hackberry I wanted to use. It was in the form of 1 by 4 lumber, so I laminated 3 pieces to make a blank 2 1/4" thick, using Titebond glue. The wood was punky, so I decided to stabilize it. I placed the blank in a toaster oven no longer used for human consumption, and dried it for several hours at about 200° (stabilizing is an entirely different subject, so get further training before attempting). I placed the blank into a Mason jar, along with some "Cactus Juice" resin and some dye, then turned on the vacuum.



With my setup, I am on my way to getting about 28.5" of vacuum, with about 29.5" being about the best we can do in St Louis. I think I may have a small leak preventing from drawing a more complete vacuum.



Under vacuum, the air trapped in the punky wood is pulled out. The bubbles are air; the resin in NOT boiling. After the bubbles stop appearing, I let the vacuum out, and the resin is sucked into the areas vacated by the air. I like to leave the blank in the solution for about double the time it was under vacuum, just to get good penetration. I then return the blank to the toaster, again about 200°, to finishing curing. In my sample, the blank about doubled in weight during the process.



Here we see a before and after. Turning a stabilized block is physically more difficult, as the blank is much harder than normal wood. It also is more prone to generating sawdust than beautiful shavings. **RESPIRATORY PROTECTION IS A MUST**. I wasn't totally satisfied with the color penetration, but at least it was something different. If you want to get into stabilizing, visit http://www.turntex.com; the proprietor is Curtis Seebeck and he has good tutorial videos and knows more on the subject than anyone else I know.



Another easy way to get variety is to use multiple species of wood in the same egg. Starting at the left, I have maple and walnut, with the interior band running lengthwise. Next, the stripe runs across the wide part of the egg. Finally, an egg where the strip runs diagonally. In each case I used Titebond II glue. I found that even with gluing, the pieces were prone to separating, so I started drilling one or two 3/8" holes in the eggs, and inserting a dowel to make the blank more stable.



This egg looked like a taco to me, or perhaps an eye ball. I had a blank which was a bit undersized in one dimension, so I laminated a piece of blackwood on opposite sides to get it up to the proper width. Just make sure that you have enough of the secondary wood, so that the secondary wood is not turned off during rounding.



Segmented eggs are one of my favorites. Here I have a 3 by 3 blank in yellowheart and redheart, and 5 by 5 blanks in walnut and maple. Strips were cut on the table saw, each about 13 inches long and a bit oversized, then laminated into three or five piece "flats". Once the flats were dry, I ran them through my planer (and since I have a drum sander, I ran them through it as well). I then glued the flats into blocks. Anytime I did a gluing operation, I was particularly careful to make sure the flat was truly flat, compressing the blanks between waxed paper and two known flat surfaces.



I was pleased with the way these turned out. A lot of work, but worth it.



Here are some egg sandwiches. On the left is an egg where I cut a "swirl" on my bandsaw, and then laminated in veneers of red and white (it helps to dampen the veneer when gluing to prevent cracking). The middle one is a sandwich of Walnut, copper sheet and Corian. Copper Sheet is available from Hobby Lobby. The egg on the right has pieces of Aluminum (barely visible) sandwiched between pieces of walnut. The Aluminum I got from beverage cans. The aluminum sheet was really thin and hard to see, so in the future I will probably use two pieces next to each other, rather than a single piece.

Egg Sandwiches



One thing I learned is that metal and Corian are very smooth, and it is difficult to get them to adhere well to each other. What worked for me was to roughen both sides on a spindle sander. A drum sander in a drill press would work as well. Although I turn just about everything with standard High Speed Steel tools, I make an exception for Corian and use carbide tools. Corian is a battle to turn, but for me is worth the effort. **RESPIRATORY PROTECTION IS A MUST** when turning Corian.

Then There is Resin



I love Resins.



Resins come in several types. I prefer Polyester resin over polyurethane (aka: Alumilite) and epoxy. Polyester is available from Michaels and Hobby Lobby (only Michaels has the larger quart size). To turn the syrupy Polyester resin into a solid, a catalyst of MEKP (Methy Ethyl Ketone Peroxide) 5 drops per ounce, does the trick in about 4 hours. MEKP is included in the pint size can of PR, but not in the quarts, but is available from Mark Twain Hobby in St Charles, in their Remote Control vehicle section. PR can be colored with Pearlex Resin available in about 40 colors from art supply stores.

I use 2" PVC pipe, about 4" long, for my molds. I cover one end in two layers of green FROG TAPE. I pour an appropriate amount of resin in a wax-free paper cup, weighing the resin to make sure I have enough (the volume of a 2" diameter, 4" long cylinder is 12.3 cubic inches, or (3.14 * r² * h, if you were asleep during that portion of geometry class). The density of PR is close enough to that of water, so each cubic inches translates into an ounce of weight (12.3 cubic inches = 12.3 ounces of resin), so have a postal scale on hand to do the weighing (and cover the scale with waxed paper to keep it clean; don't ask how I learned that lesson). Multiple paper cups will be needed, but use that as an opportunity to use Pearlex to color the casting, although many look great clear. Add the catalyst, stir and pour into the mold. Let it stand for 4 hours, or better yet, overnight. To pop the casting from the PVC, use a hammer and a dowel rod to "encourage" it to leave the pipe. If it is still a bit sticky, place the casting in the sun or toaster oven (one from a thrift store, not the one from your kitchen) at 190° for about 30 minutes. Then on to the lathe.

Some people object to the smell of Polyester resin when it is curing, so you may want to do the preparation out of doors – it doesn't bother me. Also, acrylics of any sort are prone to chipping, so sharp tools and light cuts are the "order of the day". To learn more about resin casting, look for advice on YouTube. I particularly like Zac Higgins on this topic.

Then There is Resin



You might learn from others that a "Pressure Pot" is required to get bubbles out of castings. While that is true for polyurethane and epoxy resins, it is not usually required for Polyester resin, which is one reason I like PR (it is also less expensive). But if you want, a paint pot hooked up to a shop compressor will do the trick. Just **DO NOT EXCEED THE PRESSURE RATING OF THE POT.** My pot is rated at 60 PSI, and I run it at 40 for casting. Make sure your emergency pop-off valve is appropriately sized as well. Remember, another word for "pressure pot" is "bomb".

Then There is Resin



Same slide here as earlier, but more description is in order. From the top, left to right, I cast a clear blank with a charm bracelet "dragon" suspended in the middle (I poured the blank in stages to get the dragon suspended). Next is a blank with shreds of "worthless wood" with brown and silver Pearlex. On the top right is a clear blank with a sweet gum ball suspended.

In the second row, on the left, is a blank colored with gold Pearlex, to make a "golden egg". In the middle is a Rainbow Egg (more about that later), On the right is a "Resin Refuse" egg; when making a casting it is always wise to blend a bit more resin than you think you need. But what do you do with the excess, if any? Why, take another piece of "Frog Taped" PVC pipe and pour the excess into your new "slop bucket". Over time, the bucket will turn into layers of surplus resin. When filled, pop it out and cut it into small, irregularly shaped pieces and place them randomly into a fresh piece of PVC, much like popcorn in a bucket. Then mix up some more resin (clear or lightly colored work well) and "Presto", you have a "Resin Refuse" casting. These make great eggs, but also Christmas Trees (for mantle display, too heavy as ornaments) and mushrooms (use a wider mold).

The bottom two are "Secret Wood" eggs. The bottom part is a burl. I use small quantities of PR to stipple color onto the burl. After drying, I may stipple a contrasting color. Then I pour a clear or VERY SLIGHTLY colored resin. When turned, they look like fairy scenes.

On all of these castings, I usually use the 2" diameter mold. I may also choose to turn the large end almost flat to allow for vertical display.



Here is how the rainbow casting turned out.



For the Rainbow egg, the mold was a bit different. I wanted the casting to be diagonal, so I made the molding pipe a bit longer, cut the top on a slant, and added two legs on a 60° angle, or thereabouts. I then poured in Resin colored red, orange, yellow, green, light blue, dark blue and violet, about 1.5 ounces at a time. I poured a bit more of the red and the violet. This pour took several days, as I had to leave about 8 hours between colors, to make sure I had relatively hard edges. I should have used less resin or a wider blank, because the blank turned out to be too long for its width to be an egg. So, when turned it will be a sculpture, not an egg.



Here are some of the resin eggs when turned. The first one had a burl and the resin had just a small bit of blue Pearlex; I call it "Northern Lights". The middle one has the dragon charm; the different pours did leave a soft edge between layers, and the next time I do this I will probably wait only an hour or so between pours to avoid the faint edge. The third one is a "golden egg", which I particularly like.



I just had to try my hand at decals. I do model railroading, and I have been successful at finding vintage signs on the Internet for use in building billboards for my railroad. Similarly, I went looking for Easter clip art on the web, and when I found something I liked, I used the Windows "cut and paste" function to drop the image into PowerPoint, and then used PPT to size the image to my liking. I would fill the PPT page with images (sometimes duplicates, if I wanted to use the image on multiple eggs), and printed the page on an inkjet printer. To transfer an image to an egg, I cut the decal close to the edge, soaked it in water for 20 seconds, and then I would slide the decal onto the egg. One could also place text of children's names onto the PPT page and transfer to an egg.

Actually printing the decal sheet is a bit tricky. I use decal paper I get from Amazon ("Water Slide Decal Paper", the "clear" variety, is what I use; \$18 for 20 sheets). After printing, I allow the sheet to dry overnight, and then get some spray lacquer from an auto paint store and give the sheet two coats about an hour or more apart; the lacquer will protect the water soluble decals from the water needed to separate the image from the backer. Don't make the images much more than a inch or so in height, or they will be difficult to wrap around the curvature of the egg.



Beyond what I can do now are folks that can carve images into eggs with lasers, make segmented egg boxes, or do Ukrainian eggs. But they can be done, just not by me. Yet.



Oh, to display your eggs, consider using small pieces of PVC pipe in a variety of sizes, spray painted to be attractive. You might also want to use small pieces of wood or acrylic. You could place the name of the egg, or the name of the recipient on a decal and place it on the stand.



Have you had enough? I have. May I leave you with a parting thought?

"Give Eggs a Try and Make Someone Happy With An Eggcellent Gift".

Now it's time to clean the shop.

